C-A Unreviewed Safety Issue (USI) Form

Title of USI: Clarification of RHIC SAD ODH Regulation Discussion (SAD p. 4-11 and Appendix 29)

Description of USI (use attachments if necessary):
A recent work issue at the Collider Tunnel on December 27, 2000 resulted in a review of ODH issues at the facility by C-A (Critique CR-C-A-2001-01). Discussion with DOE and a surveillance by the DOE-BAO on oxygen deficiency hazards, resulted in the conclusion that the RHIC SAD (page 4-11) and a BNL consultant's report (Appendix 29 of the RHIC SAD) was not correct when characterizing OSHA regulations for oxygen deficient atmospheres. This issue has no direct effect on personnel safety.

Attachment 1 summarizes the issues and correctly states the OSHA regulation and the methods used to protect workers from oxygen deficient atmospheres at all C-A facilities.

The above sections of the RHIC SAD will be revised during the next routine SAD update.

Title and Date of Relevant SAD: RHIC SAD (12/30/99)

Committee Chair or ESHQ Division Head must initial all items. Leave no blanks:

ITEM	APPLIES	DOES NOT APPLY
Decision to not revise the current SAD and/or ASE at this time: The hazard associated with the proposed work or event is covered within an existing SAD and/or ASE. SAD Title and Date: RHIC SAD 12-30-99. This Form and attachments, if necessary, shall be used to document the USI until the next revision of the appropriate SAD.	RLL RLL RLL	
Decision to submit a revised SAD and/or ASE to the BNL ESH Committee: The hazard associated with the proposed work is not appropriately included in an SAD.		RLL

Ray Karol — 3-28-01
Signature of C-A Committee Chair or C-A ESHQ Division Head — Date

Edward T Lessard — 3-28-01
Signature of C-A Associate Chair for ESHQ — Date

Attachment 1

Issue #1 An external BNL safety consultant review and report (RHIC SAD, Appendix 29) of RHIC compliance with OSHA confined space and ODH requirements, is confusing as to the application of OSHA regulations. The consultant review of the RHIC tunnel's permanently installed, fixed oxygen monitor alarm setpoint (18%) was determined appropriate for a helium piping pressure boundary failure. The report was silent on the issue of other gases. For example, nitrogen is used to keep the lines moisture free during shutdown. Nitrogen density is higher than helium. The response of the oxygen monitors to nitrogen will be different since the monitors are located high, in order to quickly detect the rising helium during an accident. Small amounts of nitrogen are released during routine maintenance/repair when the ring is open.

Resolution #1 Based on the critique of the ODH alarm in December 2000 (Critique CR-C-A-2001-01), work planning (C-A OPM 2.28,C-A Procedure for Enhanced Work Planning) now assures that adequate controls are in place in order to preclude worker exposures to oxygen deficient atmospheres (<19.5% as defined by OSHA in 29CFR1910.134(b)) during routine work. This includes proper posting of the work area and wearing of portable oxygen monitors when the ring is open and purged with nitrogen.
The 18% setpoint is appropriate for upset and accident conditions and is in accordance with the BNL SBMS ODH Subject Area. Emergency procedures in C-A OPM 3.15 and 3.15.1 caution workers, during emergencies involving suspect (spurious) or actual ODH alarms, to immediately evacuate any area where oxygen is <19.5%.

Issue #2 The consultant's report incorrectly stated that the 19.5% limit only applied to confined spaces and that OSHA was silent on oxygen limits in non-confined spaces.

Resolution #2 Actually, 29CFR1910.134(b) clearly states that the 19.5% limit applies to all workplaces.